

What is claimed is:

1. A power source for use by a user, the power source comprising:
 - 2 a housing;
 - 4 a stator component secured to the housing;
 - 6 a rotor component that rotates relative to the stator component, the rotor component including a rotor input, wherein rotation of the rotor component relative to the stator component results in the generation of electrical energy;
 - 8 a crank assembly including a first crank output that is rotated by the user; and
 - 10 a one-way drive mechanism that couples the crank assembly to the rotor component, the one-way drive mechanism inhibiting rotation of the first crank output relative to the rotor input when the first crank output is rotated in a first rotational direction and allows for rotation of the first crank output relative to the rotor input when the first crank output is rotated in a second rotational direction that is opposite from the first rotational direction.
2. The power source of claim 1 further comprising a control system that
 - 2 receives the electrical energy and electronically controls the amount of torque required to rotate the rotor input by dynamically adjusting the level of at least one
 - 4 of an output voltage and an output current.
3. The power source of claim 2 wherein the crank assembly includes a
 - 2 first pedal that is coupled to the first crank output and a second pedal that is coupled to a second crank output, wherein each pedal moves between a first
 - 4 position and a second position, and wherein the control system electronically controls the amount of torque required to rotate each crank output by dynamically
 - 6 adjusting the level of at least one of an output voltage and an output current.

4. The power source of claim 3 wherein when the first pedal is in the first position the torque required to rotate the first crank output is greater than the torque required to rotate the first crank output when the first pedal is at the second position.

5. The power source of claim 4 wherein when the first pedal is at the first position the torque is at least approximately 5 percent greater than when the first pedal is at the second position.

6. The power source of claim 4 wherein when the first pedal is at the first position the torque is at least approximately 10 percent greater than when the first pedal assembly is at the second position.

7. The power source of claim 1 further comprising a control system that receives the electrical energy and electronically controls the amount of torque required to rotate the rotor input by dynamically adjusting the level of the electrical energy delivered to a load.

8. The power source of claim 7 wherein the crank assembly includes a first pedal that is coupled to the first crank output and a second pedal that is coupled to a second crank output, wherein each pedal moves between a first position and a second position, and wherein the control system electronically controls the amount of torque required to rotate each crank output by dynamically adjusting the level of the electrical energy delivered to the load.

9. The power source of claim 1 further comprising a control system that receives the electrical energy and electronically controls a rotational velocity of the rotor component.

10. The power source of claim 9 wherein the crank assembly includes a
2 first pedal that is coupled to the first crank output, wherein the first pedal moves
between a first position and a second position, and wherein the control system
4 electronically controls the rotational velocity of the rotor component so that the
rotational velocity is approximately constant during the movement of the first pedal
6 between the first position and the second position.

11. The power source of claim 10 wherein the first position is an upper
2 pedal position and the second position is a lower pedal position.

12. The power source of claim 11 wherein the control system
2 electronically controls the rotation velocity of the rotor component so that the
rotational velocity is approximately constant during the movement of the first pedal
4 between the second position and the first position.

13. The power source of claim 9 wherein the crank assembly includes a
2 second pedal that is coupled to a second crank output, wherein the second pedal
moves between an upper pedal position and a lower pedal position, and wherein
4 the control system electronically controls the rotational velocity of the rotor
component so that the rotational velocity is approximately constant during the
6 movement of the second pedal back and forth between the positions.

14. The power source of claim 1 further comprising a control system that
2 receives the electrical energy and dynamically adjusts the level of at least one of
an output voltage and an output current.

15. The power source of claim 14 wherein the control system includes
2 an additional electrical input for receiving electrical energy from an additional
power source.

16. The power source of claim 1 further comprising a control system that
2 receives the electrical energy and causes a first signal to be transmitted to the
user through the crank assembly.

17. The power source of claim 16 wherein the control system causes the
2 crank assembly to vibrate to transfer the first signal to the user.

18. The power source of claim 17 wherein the control system causes the
2 crank assembly to vibrate at a first pulse to transfer the first signal to the user.

19. The power source of claim 18 wherein the control system causes the
2 crank assembly to vibrate at a second pulse to transfer a second signal to the
user, the second pulse being different than the first pulse.

20. The power source of claim 16 wherein the control system causes a
2 torque of the crank assembly to change at a first rate to transfer a first signal to
the user.

21. The power source of claim 20 wherein the control system causes the
2 torque of the crank assembly to change at a second rate to transfer a second
signal to the user.

22. The power source of claim 16 wherein the crank assembly includes
2 a first pedal and a second pedal.

23. The power source of claim 1 further comprising a control system that
2 receives the electrical energy, the control system including an energy dissipater
that selectively dissipates energy.

24. A power source that is powered by a user to charge a load, the
2 power source comprising:
a housing;
4 a stator component secured to the housing;
a rotor component that rotates relative to the stator component,
6 wherein rotation of the rotor component relative to the stator component
results in the generation of electrical energy;
8 a crank assembly that includes a first crank output that is rotated by
the user, wherein rotation of the first crank output results in rotation of the
10 rotor component; and
a control system that receives the electrical energy and
12 electronically controls the amount of torque required to rotate the rotor
component based on at least one of (i) an angular velocity of the first crank
14 output, (ii) an angular position of the crank assembly, (iii) a current in the
load, and (iv) a current generated by rotation of the rotor component
16 relative to the stator component.

25. The power source of claim 24 further comprising a one-way drive
2 mechanism that couples the crank assembly to the rotor component, the one-way
drive mechanism inhibiting rotation of the first crank output relative to a rotor input
4 of the rotor component when the first crank output is rotated in a first rotational
direction and allows for rotation of the first crank output relative to the rotor input
6 when the first crank output is rotated in a second rotational direction that is
opposite from the first rotational direction.

26. The power source of claim 24 wherein the control system includes
2 an additional electrical input for receiving electrical energy from an additional
power source.

27. The power source of claim 24 wherein the control system causes a
2 first signal to be transmitted to the user through the crank assembly.

28. The power source of claim 27 wherein the control system causes the
2 crank assembly to vibrate to transfer the first signal to the user.

29. The power source of claim 28 wherein the control system causes the
2 crank assembly to vibrate at a first pulse to transfer the first signal to the user.

30. The power source of claim 29 wherein the control system causes the
2 crank assembly to vibrate at a second pulse to transfer a second signal to the
user, the second pulse being different than the first pulse.

31. The power source of claim 27 wherein the control system causes the
2 torque required to rotate the rotor component to change at a first rate to transfer a
first signal to the user.

32. The power source of claim 31 wherein the control system causes the
2 torque required to rotate the rotor component to change at a second rate to
transfer a second signal to the user.

33. The power source of claim 27 wherein the crank assembly includes
2 a first pedal and a second pedal.

34. The power source of claim 24 wherein the control system including
2 an energy dissipater that selectively dissipates energy.

35. A power source that is powered by a user to direct current to an
2 object, the power source comprising:
a housing;

4 a stator component secured to the housing;
 a rotor component that rotates relative to the stator component;
6 a crank assembly that is coupled to the rotor component, the crank
 assembly including a first crank output that rotates relative to the housing,
8 wherein rotation of the first crank output by the user results in rotation of
 the rotor component relative to the stator component and the production of
10 electrical energy; and
 a control system that receives the electrical energy and causes a
12 first signal to be transmitted to the user through the crank assembly.

36. The power source of claim 35 wherein the control system causes the
2 crank assembly to vibrate to transfer the first signal to the user.

37. The power source of claim 36 wherein the control system causes the
2 crank assembly to vibrate at a first pulse to transfer the first signal to the user.

38. The power source of claim 37 wherein the control system causes the
2 crank assembly to vibrate at a second pulse to transfer a second signal to the
user, the second pulse being different than the first pulse.

39. The power source of claim 35 wherein the control system causes a
2 torque required to rotate the rotor component to change at a first rate to transfer a
first signal to the user.

40. The power source of claim 39 wherein the control system causes the
2 torque required to rotate the rotor component to change at a second rate to
transfer a second signal to the user.

41. The power source of claim 35 wherein the control system receives
2 the electrical energy and electronically controls the amount of torque required to
rotate the rotor component by dynamically adjusting the level of at least one of an
4 output voltage and an output current.

42. The power source of claim 41 wherein the crank assembly includes
2 a first pedal that is coupled to the first crank output and a second pedal that is
coupled to a second crank output, wherein each pedal moves between a first
4 position and a second position, and wherein the control system electronically
controls the amount of torque required to rotate each crank output by dynamically
6 adjusting the level of at least one of an output voltage and an output current.

43. The power source of claim 35 wherein the control system
2 electronically controls a rotational velocity of the rotor component.

44. The power source of claim 43 wherein the crank assembly includes
2 a first pedal that is coupled to the first crank output, wherein the first pedal moves
between an upper position and a lower position, and wherein the control system
4 electronically controls the rotational velocity of the rotor component so that the
rotational velocity is approximately constant during the movement of the first pedal
6 back and forth between the upper position and the lower position.

45. The power source of claim 35 wherein the control system
2 dynamically adjusts the level of at least one of an output voltage and an output
current.

46. The power source of claim 45 wherein the control system includes
2 an additional electrical input for receiving electrical energy from an additional
power source.

47. The power source of claim 35 wherein the control system includes
2 an energy dissipater that selectively dissipates energy.

48. A power source that is powered by a user to direct current to an
2 object, the power source comprising:
a housing;

4 a stator component secured to the housing;
 a rotor component that rotates relative to the stator component;
6 a crank assembly that is coupled to the rotor component, the crank
 assembly rotating relative to the housing, wherein rotation of the crank
8 assembly by the user results in rotation of the rotor component relative to
 the stator component and the production of electrical energy; and
10 a control system that receives the electrical energy, the control
 system including an energy dissipater that selectively dissipates electrical
12 energy.

49. The power source of claim 48 wherein the control system selectively
2 dissipates electrical energy when the object is charged.

50. The power source of claim 48 wherein the control system causes a
2 first signal to be transferred to the user through the crank assembly.

51. The power source of claim 48 wherein the control system
2 electronically controls the amount of torque required to rotate the rotor component
 by dynamically adjusting the level of at least one of an output voltage and an
4 output current.

52. The power source of claim 51 wherein the crank assembly includes
2 a first pedal that is coupled to a first crank output and a second pedal that is
 coupled to a second crank output, wherein each pedal moves between a first
4 position and a second position, and wherein the control system electronically
 controls the amount of torque required to rotate each crank output by dynamically
6 adjusting the level of at least one of an output voltage and an output current.

53. The power source of claim 48 wherein the control system electronically
2 controls a rotational velocity of the rotor component.

54. The power source of claim 53 wherein the crank assembly includes
2 a first pedal that moves between an upper position and a lower position, and
wherein the control system electronically controls the rotational velocity of the
4 rotor component so that the rotational velocity is approximately constant during
the movement of the first pedal back and forth between the upper position and
6 the lower position.

55. The power source of claim 48 wherein the control system
2 dynamically adjusts the level of at least one of an output voltage and an output
current.

56. The power source of claim 55 wherein the control system includes
2 an additional electrical input for receiving electrical energy from an additional
power source.

57. A power source combination for use by a first user and a second
2 user for directing current to an object, the power source combination comprising:
a first power source that is powered by the first user that is
4 electrically connected to the object, the first power source including a
housing, a stator component secured to the housing, a rotor component
6 that rotates relative to the stator component, a crank assembly that is
coupled to the rotor component, the crank assembly rotating relative to the
8 housing, wherein rotation of the crank assembly by the first user results in
rotation of the rotor component relative to the stator component and the
10 production of electrical energy, and a control system that takes the
electrical energy and electronically controls the level of first output voltage
12 to the object; and

14 a second power source that is powered by the second user that is
electrically connected to the object, the second power source including a
16 housing, a stator component secured to the housing, a rotor component
that rotates relative to the stator component, a crank assembly that is
coupled to the rotor component, the crank assembly rotating relative to the
18 housing, wherein rotation of the crank assembly by the second user
results in rotation of the rotor component relative to the stator component
20 and the production of electrical energy, and a control system that takes the
electrical energy and electronically controls the level of second output
22 voltage to the object so that the second output voltage approximately
matches the first output voltage.